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*January 26, 2006*

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APPLICATION NUMBER: 60/626,569

FILING DATE: *November 10, 2004*

RELATED PCT APPLICATION NUMBER: *PCT/US05/40876*

THE COUNTRY CODE AND NUMBER OF YOUR PRIORITY APPLICATION, TO BE USED FOR FILING ABROAD UNDER THE PARIS CONVENTION, IS *US60/626,569*



Certified by

Under Secretary of Commerce  
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111004

17589 U.S. PTO

PTO/SB/16 (09-04)

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**PROVISIONAL APPLICATION FOR PATENT COVER SHEET**

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

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U.S. PTO  
22154  
60/626569

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INVENTOR(S)		
Given Name (first and middle (if any))	Family Name or Surname	Residence (City and either State or Foreign Country)
Christopher	Roche	Amherst, NH
Michael F.	Greene	Amherst, NH
Additional inventors are being named on the _____ 0 _____ separately numbered sheets attached hereto		
<b>TITLE OF THE INVENTION (500 characters max):</b>		
Wearable Or Portable Device For Establishing Communications Interoperability At An Incident Site		
Direct all correspondence to: <b>CORRESPONDENCE ADDRESS</b>		
<input checked="" type="checkbox"/> The address corresponding to Customer Number: <span style="border: 1px solid black; padding: 2px 20px;">22500</span>		
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<b>ENCLOSED APPLICATION PARTS (check all that apply)</b>		
<input checked="" type="checkbox"/> Specification Number of Pages <u>6</u>		
<input type="checkbox"/> Drawing(s) Number of Sheets _____		
<input type="checkbox"/> Application Data Sheet. See 37 CFR 1.76		
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<b>METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT</b>		
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27.		
<input type="checkbox"/> A check or money order is enclosed to cover the filing fees.		
<input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached.		
<input checked="" type="checkbox"/> The Director is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number: <u>190130</u> A duplicative copy of this form is enclosed for fee processing.		
<input checked="" type="checkbox"/> The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government. No.		
<input type="checkbox"/> Yes, the name of the U.S. Government agency and the Government contract number are: _____		

SIGNATURE

Daniel J. Long

Date

11/9/04TYPED or PRINTED NAME Daniel J. LongREGISTRATION NO. 29,404

(if appropriate)

TELEPHONE 603-885-2643Docket Number: 20040136 PRO**USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT**

This collection of information is required by 37 CFR 1.51. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 8 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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EXPRESS MAIL CERTIFICATE EV453030932US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Roche, et al.

Filed: Herein

Atty. Dkt. No: 20040136 PRO

For: Wearable Or Portable Device For Establishing Communications Interoperability At An Incident Site

CERTIFICATE OF MAILING 37 CFR 1.10: I certify that this correspondence is being deposited on the below date with the U.S. Postal Service with sufficient postage as EXPRESS MAIL addressed to: Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450.

Date:

11-10-04

*Gloria Abbasciano*

Gloria Abbasciano

Dear Honorable Commissioner:

LETTER OF TRANSMITTAL

Submitted herewith is a Provisional Patent Application consisting of 6 pages of cover sheet, specification and claims.

[ ] Invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

DEPOSIT ACCOUNT 190130 AUTHORIZATION – The Office is hereby authorized to charge the required fee, and any deficiency or credit any overpayment in the fees to the above deposit account, owned by BAE SYSTEMS Information and Electronic Systems Integration Inc.

Respectfully submitted,

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**WEARABLE OR PORTABLE DEVICE FOR ESTABLISHING  
COMMUNICATIONS INTEROPERABILITY AT AN INCIDENT SITE**

**Cross Reference to Related Applications**

This application is related to U.S. Patent Applications Serial No. 10/943,323, filed September 17, 2004 and Serial No. 60/575,774 filed May 28, 2004, the contents of both of which are incorporated herein by reference.

**Background of the Invention**

**1. Field of the Invention.**

The present invention relates to mobile communications and more particularly to an ad hoc module for establishing a temporary incident area network which at a local scene of an incident for communication interoperability compatible with and through the responder's everyday standard issued communication units.

**2. Brief Description of Prior Developments**

The above-referenced U.S. Patent Application Serial No. 10/943,232 discloses an ad hoc emergency interoperability communication network which is established by providing universal temporary incident area network modules that communicate with each other on a network, with the network being established when vehicles containing the temporary incident area network modules within range of each other. The temporary incident area network modules are such as to have an RF or other connection with handheld or in-vehicle communications devices of whatever variety, but which have standardized voice, data and push-to-talk channels. The system thus allows communications amongst the responders to an incident without having to set up

prearranged protocols, equipment compatibilities, or equipment addressing. Moreover, command and control structure can be achieved through a commander having access through his own temporary incident area network module to be able to route and control the flow of information of the net. Portable temporary incident area network modules may be provided to provide range extension capabilities, for instance, for handheld modules that communicate with the temporary incident area network modules, which have a self-contained battery. Moreover, in one embodiment, switches are provided on the communications equipment for the individual to be able to have the communications equipment switched between the ad hoc temporary incident area network and the closed network of the department for whom the individual works.

When a first responder enters a building, the structure of the building often interferes with the transmission of communications signals. The first responder is thus cut off from other first responders and from the dispatcher or incident commander. This situation is potentially dangerous, and one that the first responders usually try to avoid. Once communication is lost, there may be no way to know where the first responder is located within the building. If the first responder or another first responder cannot describe their location, the commander may have no sense of their location.

A need, therefore, exists for a solution to the above problems.

#### Summary of Invention

According to the present invention, the module in the network described in U.S. Patent Application Serial No. 10/943,323 is portable, wearable and battery powered, which allows a first responder /war fighter to enter the building and communicate with other first responders/war fighters via the ad hoc wireless network established at the

incident scene. Each first responders/war fighters wearing a portable module which becomes a node in the ad hoc network thereby extending that network. Placing a portable at the entrance to and throughout the building provides a communications path (via ad hoc wireless mesh network) to the remainder of the network outside the building there by connecting the first responders/war fighter inside the building with the first responders/war fighter outside the building and to the commander.

#### Detailed Description of the Preferred Embodiment

By reducing the size of the module in the network described in U.S. Patent Application Serial No. 10/943,323 and adding a battery (rechargeable preferred), the module may be made portable. It will be appreciated that this system has the capability to create the wireless ad hoc mesh network required to establish connectivity between individual modules, whether wearable, portable or vehicle mounted.

Adding voice recognition, for example, to this unit will allow the first responder to register with the system. The system will uniquely identify the individual by matching the voice pattern to a pattern in the controlled database. Through this recognition the network system will assign a default set of attributes for that first responder including initial communication set up.

The method and apparatus of this invention may also be used by war fighters entering an urban zone. In this case, the use of the portable module and the wearable module would allow the war fighters entering buildings to maintain communications between themselves and with war fighters equipped with modules outside of the building.

While the present invention has been described in connection with the preferred embodiments of the various figures, it is to be understood that other similar embodiments

may be used or modifications and additions may be made to the described embodiment for performing the same function of the present invention without deviating therefrom. Therefore, the present invention should not be limited to any single embodiment, but rather construed in breadth and scope in accordance with the recitation of the appended claims.



Claims

What is claimed is:

1. A system for aiding first responders to an incident to intercommunicate regardless of the type of communications devices used by the first responders, comprising a temporary incident area network module for one or more of said communications devices, said module converting the frequencies and protocols of the communications devices coupled thereto to a universal frequency and protocol and establishing wireless communication between said universal modules using said universal frequency and protocol, one of said modules setting up an ad hoc temporary incident area network at said incident, such that when additional modules arrive at the incident, said ad hoc temporary incident area network permits interoperability between communications devices used by the first responders arriving at the incident, wherein at least one of the temporary incident area network modules are portable such that first responders located in a building have a wireless communications path redundant to standard communications.

Abstract

A system for aiding first responders to an incident to intercommunicate regardless of the type of communications devices used by the first responders. A temporary incident area network includes a module for one or more of said communications devices. There is also a module which converts the frequencies and protocols of the communications devices coupled thereto to a universal frequency and protocol and establishes wireless communication between said universal modules using said universal frequency and protocol. One of the modules sets up an ad hoc temporary incident area network at said incident, such that when additional modules arrive at the incident, the ad hoc temporary incident area network permits interoperability between communications devices used by the first responders arriving at the incidents. At least one of the temporary incident area network modules are portable, so that first responders located in a building have a wireless communications path redundant to standard communications.

From the INTERNATIONAL BUREAU

**PCT**NOTIFICATION CONCERNING  
SUBMISSION OR TRANSMITTAL  
OF PRIORITY DOCUMENT

(PCT Administrative Instructions, Section 411)

To:

LONG, Daniel, J.  
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Date of mailing (day/month/year) 22 March 2006 (22.03.2006)		IMPORTANT NOTIFICATION	
Applicant's or agent's file reference 20040136 PCT			
International application No. PCT/US2005/040876	International filing date (day/month/year) 10 November 2005 (10.11.2005)		
International publication date (day/month/year) Not yet published	Priority date (day/month/year) 10 November 2004 (10.11.2004)		
Applicant BAE SYSTEMS INFORMATION AND ELECTRONIC SYSTEMS INTEGRATION INC. et al			

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Priority date	Priority application No.	Country or regional Office or PCT receiving Office	Date of receipt of priority document
10 November 2004 (10.11.2004)	60/626,570	US	02 February 2006 (02.02.2006)
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